

Sample Results Summary Sheet

Please return this form to the Curator for each allocated Sample

Sample ID: RA-QD02-0015

PI: Keisuke Nagao

Type and date of analysis performed: Noble gas isotopic compositions

31/01/2011 - 02/02/2011

Elements or phases identified: Solar wind He, Ne, and Ar were identified.

Contaminant phases identified: Most of ^{40}Ar and slightly higher abundances of Xe compared with blank levels would be terrestrial contamination. Kr was comparable with blank level. The blank levels were $(3.1-4.0)\times 10^{-12}$ for ^4He , $(5.4-6.5)\times 10^{-13}$ for ^{20}Ne , $(4.2-4.7)\times 10^{-14}$ for ^{36}Ar , $(1.2-1.4)\times 10^{-11}$ for ^{40}Ar , $(1.1-1.5)\times 10^{-15}$ for ^{84}Kr , and $(0.4-1.6)\times 10^{-16}$ for ^{132}Xe in the unit of cm^3STP .

Sample handling: In ultra-high vacuum

State of sample pre-analysis: Hold in N_2 -gas before in ultra-high vacuum. During the operation to connect the sample chamber with the purification line, the samples were accidentally exposed to the ambient atmosphere for about 2 hours. The chamber was evacuated to ultra-high vacuum condition, $\leq 10^{-7}$ Pa, and then mildly warmed at 60°C overnight, followed by keeping at room temperature for a week.

State of sample post-analysis: Consumed by laser ablation.

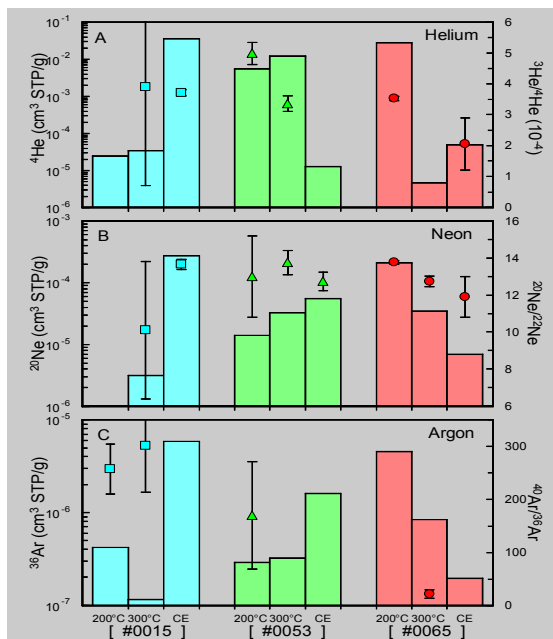
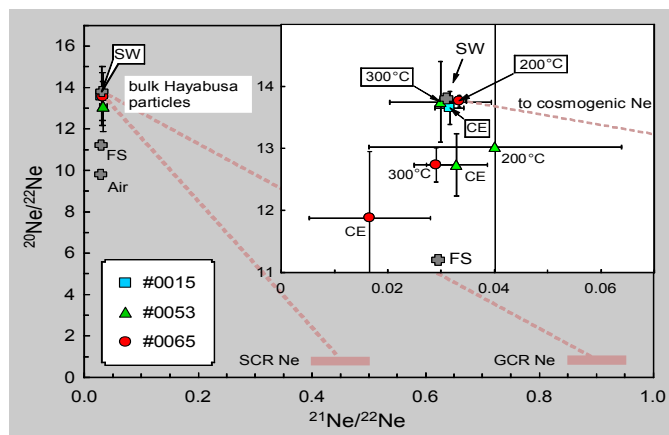
Analysis data Notes: Summarized in separate Excel file.

Isotopic ratios and concentrations of He, Ne, and Ar in Hayabusa RA-QD02-0015.

RA-QD02-0015 (0.061 μg : estimated from shape and density)

Extraction step	^4He (10^{-6} cm 3 STP/g)	$^3\text{He}/^4\text{He}$	^{22}Ne (10^{-6} cm 3 STP/g)	$^{20}\text{Ne}/^{22}\text{Ne}$	$^{21}\text{Ne}/^{22}\text{Ne}$	^{36}Ar (10^{-6} cm 3 STP/g)	$^{38}\text{Ar}/^{36}\text{Ar}$	$^{40}\text{Ar}/^{36}\text{Ar}$	$^4\text{He}/^{20}\text{Ne}$	$^{36}\text{Ar}/^{20}\text{Ne}$
200°C	24.7					0.23	0.193	218		
±	9.7					± 0.11	± 0.063	± 84		
200°C (reheat)						± 0.19	± 0.13	± 302		
±						± 0.11	± 0.10	± 20		
300°C	34	0.00039	0.31	10.1		0.12	0.20	301	11.0	0.0368
±	12	± 0.00032	± 0.17	± 3.7		± 0.11	± 0.15	± 88	± 8.2	± 0.0415
CE	35056	0.0003711	20.0	13.65	0.0316	5.85	0.1868		128.1	0.0214
±	3511	± 0.000097	± 2.1	± 0.27	± 0.0027	± 0.67	± 0.0062		± 18.7	± 0.0033
Total	35115	0.000382	20.4	13.6	0.0312	6.38	0.185	22.3	126.9	0.0231
±	3511	± 0.000038	± 2.1	± 1.4	± 0.0042	± 0.69	± 0.021	± 4.2	± 22.5	± 0.0042

CE denotes Complete noble gas Extraction.



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